What Is Claimed Is:

1.   A method for determining a displacement state of a clutch actuator for a vehicle, the clutch actuator being driven by an electric motor, wherein the armature resistance (R_A) of the electric motor is determined in a stationary state of the electric motor, at the determined armature resistance (R_A) and applied motor voltage (U) as well as measured motor current (I), a current (I_{Ind}) induced in the electric motor and/or an induced voltage (U_{Ind}) are calculated, and from the induced current (I_{Ind}) and/or induced voltage (U_{Ind}), which are proportional to the motor speed (n), the displacement state of the clutch actuator is determined.

2.   The method as described in Claim 1, wherein the armature resistance (R_A) is determined by the following equation:

$$I = \frac{U}{R_A}$$

wherein

I = measured motor current;

U = applied motor voltage;

R_A = armature resistance.

3.   The method as described in Claim 1, wherein the motor speed (n), which is a function of the induced current (I_{Ind}) is determined by following equation:

$$n \propto I_{Ind} = \frac{U_{IND}}{R_A} = \frac{U}{R_A} - I$$

wherein

n = motor speed:

I_{Ind} = induced current;

U_{Ind} = induced voltage;

R_A = armature resistance;

I = motor current on the electric motor;

U = motor voltage on the electric motor.

4.   The method as described in Claim 3, wherein the induced voltage (U_{Ind}) is calculated as a function of the motor speed (n) by the following equation:

$$U_{Ind} = k_e \cdot n$$

wherein

n = motor speed;

U_{Ind} = induced voltage;

k_e = proportionality factor.

5.   The method as described in Claim 4, wherein for a clutch actuator having incremental travel measurement, a recalibration is carried out by determining the armature resistance (R_A) at pre-determined time intervals.

6.   The method as described in Claim 5, wherein when there is a failure of the incremental position encoder, the induced current (I_{Ind}) is used to carry out an emergency operation strategy.

7.   The method as described in Claim 1, wherein a change of the motor speed n of the electric motor is detected with the respect to the motor current (I) in order to determine the position of the clutch actuator at an abutment and/or a detent.

8.   The method as described in Claim 1, wherein the motor temperature is determined at a known armature resistance (R_A).

9.   The method as described in Claim 1, wherein the motor voltage (U) is selected at a determined armature resistance (R_A) in such a manner that a specific motor current (I) and a specific torque is produced at the motor.